Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended): A system for determining customized feed for at least one animal, the system comprising:

a first memory portion configured to store animal data representative of the characteristics of the animal;

a second memory portion configured to store first feed data representative of the feed ingredients located at a first location;

a third memory portion configured to store second feed data representative of the feed ingredients located at a second location;

a fourth memory portion configured to store evaluation data representative of at least one evaluation criteria; and

a data processing circuit in communication with the memory portions and configured to generate nutrient profile data representative of a nutrient profile for the animal based upon the animal data, the data processing circuit being further configured to generate ration data representative of a combination of ingredients from the first and second locations, the ration data being generated by the data processing circuit based upon the profile data, the first and second feed data and the evaluation data, wherein the nutrient profile data is representative of at least two nutrient components, and the system further includes a fifth memory portion in communication with the digital processor, the fifth memory portion storing variation data representative of a range for at least one nutrient component of the nutrient profile and the digital processor generates a set of ration data based upon the variation data. [[wherein the evaluation criteria include at least one of (i) animal production rate, (ii) the cost of feed per unit animal weight gain, and (iii) the feed weight per unit animal weight gain.]]

2.   (Previously Presented): The system of claim 1, wherein the animal data is representative of at least one of a beginning weight of the animal; a desired weight of the animal; an environment of the animal; a feed form; an actual or desired production level of the animal; and a relationship of animal muscle to fat of the animal.

3.   (Previously Presented): The system of claim 2, wherein the feed ingredients include at least one of a grain source, a protein source, a vitamin source, a mineral source and a fat source.

4.   (Previously Presented): The system of claim 1, wherein the evaluation data is representative of at least two evaluation criteria.

5.   (Previously Presented): The system of claim 4, wherein the animal data is representative of at least one of a beginning weight of the animal; a desired weight of the animal; an environment of the animal; a feed form; an actual or desired production level of the animal; and a relationship of animal muscle to fat of the animal.

6.   (Previously Presented): The system of claim 5, wherein the feed ingredients include at least one of a grain source, a protein source, a vitamin source, a mineral source and a fat source.

7.   (Currently Amended): The system of claim 4, further comprising a <u>sixth</u> [[fifth]] memory portion in communication with the data processing circuit, the <u>sixth</u> [[fifth]]memory portion being configured to store optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data, the data processing circuit further generating the ration data based upon the optimization weighting data.

8.   (Previously Presented): The system of claim 7, wherein the optimization weighting data may be selected to cause one of the evaluation criteria to have no effect on the generation of the ration data.

9. (Previously Presented): The system of claim 1, wherein the memory portions are portions of a digital memory and a parallel data bus is coupled between the digital memory and the data processing circuit to facilitate communication therebetween.

10. (Previously Presented): The system of claim 1, wherein the memory portions are portions of a plurality of digital memories and a network couples the digital memories to the data processing circuit to facilitate communication therebetween.

11. (Cancelled).

12. (Currently Amended): The system of claim 1 [[11]], wherein the nutrient components include at least true digestible lysine and net energy.

13. (Previously Presented): The system of claim 1, wherein the first and second feed data include an amount for each feed ingredient.

14. (Previously Presented): The system of claim 13, wherein the amount for each feed ingredient can be constrained according to one or more criteria.

15. (Previously Presented): The system of claim 14, wherein the amount of each feed ingredient can be constrained according to at least two criteria.

16.   (Currently Amended): A system for determining customized feed for at least one animal, the system comprising:

a first memory portion configured to store animal data representative of the characteristics of the animal;

a second memory portion configured to store feed data representative of the feed ingredients located at at least one location;

a third memory portion configured to store evaluation data representative of at least two evaluation criteria; and

a data processing circuit in communication with the memory portions and configured to generate profile data representative of a nutrient profile for the animal based upon the animal data, the data processing circuit being further configured to generate ration data representative of a combination of ingredients from the location, the ration data being generated by the data processing circuit based upon the profile data, the feed data and the evaluation data, wherein the nutrient profile data is representative of at least two nutrient components, and the system further includes a fourth memory portion in communication with the digital processor, the fourth memory portion storing variation data representative of a range for at least one nutrient component of the nutrient profile and the digital processor generates a set of ration data based upon the variation data. [[wherein the evaluation criteria include at least two of (i) animal production rate, (ii) cost of feed per unit animal weight gain, and (iii) feed weight per unit animal weight gain.]]

17.   (Previously Presented): The system of claim 16, wherein the animal data is representative of at least one of a beginning weight of the animal; a desired weight of the animal; an environment of the animal; a feed form; an actual or desired production level of the animal; and a relationship of animal muscle to fat of the animal; and the feed ingredients include at least one of a grain source, a protein source, a vitamin source, a mineral source and a fat source.

18.　(Currently Amended):　The system of claim 16, further comprising a <u>fifth</u> [[fourth]] memory portion in communication with the data processing circuit, the <u>fifth</u> [[fourth]] memory portion being configured to store optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data, the data processing circuit further generating the ration data based upon the optimization weighting data.

19.　(Previously Presented):　The system of claim 18, wherein the optimization weighting data may be selected to cause one of the evaluation criteria to have no effect on the generation of the ration data.

20.　(Cancelled).

21.　(Currently Amended):　The system of claim <u>16</u> [[20]], wherein the nutrient components include at least true digestible lysine and net energy.

22.   (Currently Amended): A system for determining customized feed for at least one animal, the system comprising:

first memory means for storing animal data representative of the characteristics of the animal;

second memory means for storing first feed data representative of the feed ingredients located at a first location;

third memory means for storing second feed data representative of the feed ingredients located at a second location;

fourth memory means for storing evaluation data representative of at least one evaluation criteria; and

processing means for generating profile data representative of a nutrient profile for the animal based upon the animal data, the processing means generating ration data representative of a combination of ingredients from the first and second locations, the ration data being generated by the processing means based upon the profile data, the first and second feed data and the evaluation data, wherein the nutrient profile data is representative of at least two nutrient components, and the system further includes fifth memory means for storing variation data representative of a range for at least one nutrient component of the nutrient profile and the processor means generating a set of ration data based upon the variation data. [[wherein the evaluation criteria include at least one of (i) animal production rate, (ii) the cost of feed per unit animal weight gain, and (iii) the feed weight per unit animal weight gain.]]

23.   (Previously Presented): The system of claim 22, wherein the animal data is representative of at least one of a beginning weight of the animal; a desired weight of the animal; an environment of the animal; a feed form; an actual or desired production level of the animal; and a relationship of animal muscle to fat of the animal; the feed ingredients include at least one of a grain source, a protein source, a vitamin source, a mineral source and a fat source.

24.   (Previously Presented): The system of claim 22, wherein the evaluation criteria include at least two of (i) animal production rate, (ii) the cost of feed per unit animal weight gain, and (iii) the feed weight per unit animal weight gain.

25.   (Previously Presented): The system of claim 24, wherein the feed ingredients include at least one of a grain source, a protein source, a vitamin source, a mineral source and a fat source.

26.   (Cancelled).

27.   (Currently Amended): A system for determining customized feed for at least one animal, the system comprising:

first memory means for storing animal data representative of the characteristics of the animal;

second memory means for storing feed data representative of the feed ingredients located at at least one location;

third memory for storing evaluation data representative of at least two evaluation criteria; and

processing means for generating profile data representative of a nutrient profile for the animal based upon the animal data, processing means further generating ration data representative of a combination of ingredients from the location, the ration data being generated by the processing means based upon the profile data, the feed data and the evaluation data, <u>wherein the nutrient profile data is representative of at least two nutrient components, and the system further includes a fourth memory means for storing variation data representative of a range for at least one nutrient component of the nutrient profile; and the processing means generates a set of ration data based upon the variation data.</u> [[wherein the evaluation criteria include at least one of (i) animal production rate, (ii) the cost of feed per unit animal weight gain, and (iii) the feed weight per unit animal weight gain.]]

28.   (Previously Presented): The system of claim 27, wherein the animal data is representative of at least one of a beginning weight of the animal; a desired weight of the animal; an environment of the animal; a feed form; an actual or desired production level of the animal; and a relationship of animal muscle to fat of the animal; and wherein the feed ingredients include at least one a grain source, a protein source, a vitamin source, a mineral source and a fat source.

29.   (Previously Presented): The system of claim 28, wherein the evaluation criteria include at least two of (i) animal production rate, (ii) the cost of feed per unit animal weight gain, and (iii) the feed weight per unit animal weight gain.

30.   (Currently Amended): The system of claim 27, further comprising <u>fifth</u>[[forth]] memory means for storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data, the processing means further generating the ration data based upon the optimization weighting data.

31.   (Cancelled).

32.   (Currently Amended): A method for determining customized feed for at least one animal, the method comprising:

        storing animal data representative of the characteristics of the animal;

        storing first feed data representative of the feed ingredients located at a first location;

        storing second feed data representative of the feed ingredients located at a second location;

        storing evaluation data representative of at least <u>two</u> [[one]] evaluation criteria;

        generating profile data representative of a nutrient profile for the animal based upon the animal data; [[and]]

        generating first ration data representative of a combination of ingredients from the first location, second ration data representative of a combination of ingredients from the second locations, the ration data being generated based upon the profile data, the first and second feed data and the evaluation data<u>, wherein the nutrient profile data is representative of at least two nutrient components, the method further comprising the step of generating a set of ration data based upon variation data representative of a range for at least one nutrient component of the nutrient profile; and</u>

        <u>storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data and generating the ration data further based upon the optimization weighting data.</u>

33.   (Cancelled).

34.   (Currently Amended): A method for determining customized feed for at least one animal, the method comprising:

storing animal data representative of the characteristics of the animal;

storing feed data representative of the feed ingredients located at at least one location;

storing evaluation data representative of at least two evaluation criteria;

generating profile data representative of a nutrient profile for the animal based upon the animal data; [[and]]

generating ration data representative of a combination of ingredients from the location, the ration data being generated based upon the profile data, the feed data and the evaluation data, wherein the nutrient profile data is representative of at least two nutrient components of the nutrient profile, and the method generates a set of ration data based upon variation data representative of a range for at least one nutrient component; and

storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data and generating the ration data further based upon the optimization weighting data.

35.   (Currently Amended): A customized feed for an animal, the feed produced by a process comprising:

storing animal data representative of the characteristics of the animal;

storing first feed data representative of the feed ingredients located at a first location;

storing second feed data representative of the feed ingredients located at a second location;

storing evaluation data representative of at least one evaluation criteria;

generating nutrient profile data representative of a nutrient profile for the animal based upon the animal data;

generating first ration data representative of a combination of ingredients from the first location and second ration data representative of ingredients from the second location, each ration data being generated based upon the profile data, the first or second feed data, respectively, and the evaluation data; and

generating a set of ration data based upon variation data representative of a range for <u>at least one nutrient component</u> [[the nutrient components]] of the nutrient profile, wherein the nutrient profile data is representative of at least two nutrient components.

36.   (Previously Presented): The process of claim 35, further comprising mixing the combination of ingredients and feeding the feed to the livestock.

37.   (Cancelled).

38.   (Currently Amended): A customized feed for livestock, the feed produced by a process comprising:

storing animal data representative of the characteristics of the animal;

storing feed data representative of the feed ingredients located in at least one location;

storing evaluation data representative of at least two evaluation criteria;

generating profile data representative of a nutrient profile for the animal based upon the animal data; and

generating ration data representative of a combination of the feed ingredients, the ration data being generated based upon the profile data, the feed data and the evaluation data, wherein the nutrient profile data is representative of at least two nutrient components and the process further comprises the step of generating a set of ration data based upon variation data representative of a range for at least one nutrient component [[the nutrient components]] of the nutrient profile.

39.   (Currently Amended): A customized feed for livestock, the feed produced by a process comprising:

storing animal data representative of the characteristics of the animal;

storing feed data representative of the feed ingredients located in at least one location;

storing evaluation data representative of at least two evaluation criteria;

generating profile data representative of a nutrient profile for the animal based upon the animal data

generating ration data representative of a combination of the feed ingredients, the ration data being generated based upon the profile data, the feed data and the evaluation data, wherein the nutrient profile data is representative of at least two nutrient components and the process further comprises the step of generating a set of ration data based upon variation data representative of a range for at least one nutrient component of the nutrient profile; and

mixing the combination of ingredients and feeding the feed to the livestock.

40.   (Currently Amended): A customized feed for livestock, the feed produced by a process comprising:

storing animal data representative of the characteristics of the animal;

storing feed data representative of the feed ingredients located in at least one location;

storing evaluation data representative of at least two evaluation criteria;

generating profile data representative of a nutrient profile for the animal based upon the animal data; and

generating ration data representative of a combination of the feed ingredients, the ration data being generated based upon the profile data, the feed data and the evaluation data, wherein the ration data comprises custom feed data representative of a combination of amounts of the feed ingredients, wherein the nutrient profile data is representative of at least two nutrient components and the process further comprises the step of generating a set of ration data based upon variation data representative of a range for at least one nutrient component of the nutrient profile, and wherein the ration data further comprises cost data representative of a cost associated with the custom feed data.

41.   (Currently Amended): A customized feed for livestock, the feed produced by a process comprising:

storing animal data representative of the characteristics of the animal;

storing feed data representative of the feed ingredients located in at least one location;

storing evaluation data representative of at least two evaluation criteria;

generating profile data representative of a nutrient profile for the animal based upon the animal data; and

generating ration data representative of a combination of the feed ingredients, the ration data being generated based upon the profile data, the feed data and the evaluation data, wherein the ration data comprises custom feed data representative of a combination of amounts of the feed ingredients, wherein the nutrient profile data is representative of at least two nutrient components and the process further comprises the step of generating a set of ration data based upon variation data representative of a range for at least one nutrient component of the nutrient profile, and wherein the ration data further comprises feed weight data representative of a feed weight associated with the custom feed data.

42. (Currently Amended): A customized feed for livestock, the feed produced by a process comprising:

storing animal data representative of the characteristics of the animal;

storing feed data representative of the feed ingredients located in at least one location;

storing evaluation data representative of at least two evaluation criteria;

generating profile data representative of a nutrient profile for the animal based upon the animal data; and

generating ration data representative of a combination of the feed ingredients, the ration data being generated based upon the profile data, the feed data and the evaluation data, wherein the ration data comprises custom feed data representative of a combination of amounts of the feed ingredients, wherein the nutrient profile data is representative of at least two nutrient components and the process further comprises the step of generating a set of ration data based upon variation data representative of a range for at least one nutrient component of the nutrient profile, and wherein the ration data further comprises performance data representative of a projected animal performance associated with the custom feed data.

43.   (Currently Amended): A food product from an animal fed a customized feed, the food product produced by a process comprising:

storing animal data representative of the characteristics of the animal;

storing first feed data representative of the feed ingredients located at a first location;

storing second feed data representative of the feed ingredients located at a second location;

storing evaluation data representative of at least one evaluation criteria;

generating profile data representative of a nutrient profile for the animal based upon the animal data;

generating ration data representative of a combination of ingredients from the first and second locations, the ration data being generated based upon the profile data, the first and second feed data and the evaluation data, wherein the nutrient profile data is representative of at least two nutrient components, the process further comprising the step of generating a set of ration data based upon variation data representative of a range for the nutrient components of the nutrient profile;

mixing the combination of ingredients to produce the customized feed;

feeding the customized feed to the animal; and

processing the animal to generate said food product.

44.   (Cancelled).

45.   (Currently Amended): A food product from an animal fed a customized feed, the food product produced by a process comprising:

storing animal data representative of the characteristics of the animal;

storing feed data representative of the feed ingredients located at at least one location;

storing evaluation data representative of at least two evaluation criteria;

generating profile data representative of a nutrient profile for the animal based upon the animal data;

generating ration data representative of a combination of ingredients from the first and second locations, the ration data being generated based upon the profile data, the first and second feed data and the evaluation data, wherein the nutrient profile data is representative of at least two nutrient components, the process further comprising the step of generating a set of ration data based upon variation data representative of a range for the nutrient components of the nutrient profile;

mixing the combination of ingredients to produce the customized feed;

feeding the customized feed to the animal; and

processing the animal to generate said food product.

46.   (Cancelled).

47.   (New) The system of claim 22, wherein the evaluation data is representative of at least two evaluation criteria and wherein the system further comprises a sixth memory means in communication with the processing means, the sixth memory means being configured to store optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data, the processing means further generating the ration data based upon the optimization weighting data.

48.   (New) The method of claim 32, including storing evaluation data representative of at least two evaluation criteria and further including storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data and generating the ration data further based upon the optimization weighting data.

49.   (New) The method of claim 34, including storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data and generating the ration data further based upon the optimization weighting data.

50.   (New) The customized feed of claim 35, wherein the process for producing the feed further includes storing evaluation data representative of at least two evaluation criteria and storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data and generating the ration data further based upon the optimization weighting data.

51.   (New) The customized feed of claim 38, wherein the process for producing the feed further includes storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data and generating the ration data further based upon the optimization weighting data.

52.   (New) The food product of claim 43, wherein the process for producing the food product further includes storing evaluation data representative of at least two evaluation criteria and storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data and generating the ration data further based upon the optimization weighting data.

53.   (New) The food product of claim 45, wherein the process for producing the food product further includes storing optimization weighting data representative of the effect a respective evaluation criteria has on the generation of the ration data and generating the ration data further based upon the optimization weighting data.